REMARKS

Entry of this Amendment is proper under 37 CFR §1.116, since no new claims or issues are presented by the claim amendments and the rejection currently of record is inherently defective, as described below. The Examiner needs to provide a proper rejection on the record prior to proceeding to Appeal.

Claims 1, 2, and 6-26 are all the claims presently pending in the application.

It is noted that, notwithstanding any claim amendments herein or later during prosecution, Applicant's intent is to encompass equivalents of all claim elements.

Claims 6 and 7 stand rejected under 35 U.S.C. § 102(b) as anticipated by US Patent 5,850,126 to Kanbar. Claims 1-5, 8-11, 14-16, and 18-20 stand rejected under 35 U.S.C. § 103(a) and unpatentably over Kanbar, further in view of U.S. Patent 5,783,909 to Hochstein. Claims 12, 13, and 17 stand rejected under 35 U.S.C. § 103(a) and unpatentably over Kanbar, further in view of Hochstein, and further in view of U.S. Patent 6,236,331 to Dussureault.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

A first exemplary embodiment of the claimed invention, as defined by claim 1, is directed to a light emitting diode driving circuit that includes a control pulse signal generator for generating a control pulse signal having a variable duty factor adjusted in dependence on characteristics of the light emitting diode, a smoothing circuit for smoothing the control pulse signal to generate a control voltage, and a driving circuit for generating a driving voltage according to the control voltage and supplying a forward current to the light emitting diode.

The present invention overcomes problems of the conventional devices by providing a luminance controller that approximates the luminance change characteristics of a light emitting diode with the luminance change characteristics of a lamp.

II. THE PRIOR ART REJECTIONS

The Examiner alleges that Kanbar anticipates claims 6 and 7 and, when modified by

Hochstein, renders obvious claims 1-5, 8-11, 14-16, and 18-20, and, when further modified by Dussureault, renders obvious claims 12, 13, and 17.

However, Applicant respectfully submits that the rejection currently of record fails to properly heed the plain meaning of the language of the claims, thereby inherently failing to meet the initial burden of a *prima facie* rejection.

The Applicant's comments in the previous Amendment Under 37 CFR §1.111, filed on July 21, 2004, are not repeated herein, since they remain unchanged. Instead, Applicant's response hereinbelow is based on the Examiner's Response to Arguments in Paragraph 7 on page 9 of the Office Action.

In general, Applicant respectfully submits that the Examiner's position is inherently faulty because an Examiner's duty, described in MPEP 2111, to give claim language during prosecution their "broadest reasonable interpretation" of claim language does not include paraphrasing the claimed invention in a manner such that the prior art is described. That is, as this section continues on: "*The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.*"

Moreover, even more important, MPEP 2111.01 clearly requires that the plain meaning of the claim words be applied in the "broadest reasonable interpretation": "*During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claims must be given their plain meaning unless applicant has provided a clear definition in the specification.... When not defined by applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as they would be interpreted by those of ordinary skill in the art*").

Applicant submits that, in general, the Examiner's Response in Paragraph 7 reflects a basic confusion in the rejection currently of record in applying the "broadest reasonable interpretation."

The Examiner's Response Relative to Claim 6

Turning now to the Examiner's Response, relative to claim 6, the Examiner alleges that the claim language reads on the description of Kanbar "... *because Kanbar teaches an LED lamp and a power transistor activated by a pulse generator to apply D-C pulses to a bank of LEDs, all of which are housed in the lamp, whereby the screw-in LED lamp is*

useable as a replacement for a screw-in incandescent lamp of a given wattage, yet provides a greater light output at a lower wattage (column 2, lines 22-29). Indeed, the fact that the screw-in LED lamp can be used as a replacement for a screw-in incandescent lamp reads on broad claim 6's features."

In response, Applicant submits that the Examiner ignores the plain meaning of the claim language of claim 6: "... a luminance controller that approximates the luminance change characteristics of a light emitting diode with the luminance change characteristics of a lamp."

Contrary to the Examiner's interpretation, the plain meaning of the claim language does not describe the feature of "replacement". Nor does the plain meaning describe that "light output is greater with the LED at a lower wattage".

Rather, in order to satisfy the plain meaning of the description in claim 6, the Examiner's initial burden is that of demonstrating that the Kanbar LED controller provides substantially the same *luminance change characteristics* as that of the incandescent lamp.

Applicant submits that, to one of ordinary skill in the art, the terminology "luminance change characteristics" is entirely different from "replaceability" due to having a screw-in mounting capability or an improvement over light output versus wattage of the LED compared to the incandescent lamp.

The rejection currently of record does not address the luminance change characteristics of the Kanbar LED in comparison with the incandescent lamp it is intended to replace. Instead, it incorrectly attempts to allege that "replaceability" and improvement in light output is equivalent to "luminance change characteristics ".

Applicant respectfully disagree, since, as clearly defined in the first full paragraph on page 2 of the specification, this terminology is not at all directed to the concepts of replaceability or improvement in light output. Rather, it addresses the luminance changes that occur as, for example, input voltage from the control switch changes.

Therefore, Applicant submits that one of ordinary skill in the art, particularly in view of the specific definition in the specification, would not at all agree with the Examiner that the term "luminance change characteristics" includes the features in Kanbar of replaceability and improvement in light output, upon which the Examiner relies. That is, Applicant submits that the Examiner simply ignores the plain meaning of the claim language "luminance change

characteristics" and that such refusal to heed the plain meaning, as clearly defined in the specification, is improper under the above-recited lines from MPEP §2111 and MPEP §2111.01.

Accordingly, Applicant again submits on the record, prior to Appeal, that Kanbar fails to demonstrate any equivalence between the "luminance change characteristics" of the LED versus the incandescent lamp that it is intended to replace. This is the feature that the Examiner must demonstrate in the prior art evaluation of this claim.

The features of replaceability and improvement in light output are totally irrelevant to the plain meaning of the claim language that requires that luminance change characteristics be substantially the same.

The present invention achieves this capability by changing the duty cycle of the pulses (e.g., adjusting the pulse width) to provide the same approximate luminance change characteristics of the lamp. Kanbar does not even mention the problem of equivalence of luminance change characteristics, let alone teach or suggest the specific solution to this problem that is disclosed in the present invention.

Hence, turning to the clear language of the claims, in Kanbar there is no teaching or suggestion of: "... [a] light emitting diode driving circuit comprising: a luminance controller that approximates the luminance change characteristics of a light emitting diode with the luminance change characteristics of a lamp", as required by claim 6. Independent claim 7 has similar language.

For this reason, claims 6 and 7 are clearly patentable over Kanbar.

The Examiner's Response Relative to Claim 1

In his response related to claim 1, beginning in the final paragraph on page 9 of the Office Action, the Examiner continues to allege that the invention defined by claim 1 permits the interpretation that, as best understood, the smoothing circuit could be, when the claim language is broadly interpreted, construed as referring to the smoothing action in the AC/DC conversion in module 21 of Figure 4 of Kanbar.

In response, Applicant submits that the plain meaning of the claim language indeed clearly precludes this interpretation. That is, contrary to the Examiner's allegation, the plain meaning of the current claim language clearly defines the relationship between the pulse signal

generation and the smoothing circuit: " ... a control pulse signal generator for generating a control pulse signal ... a smoothing circuit for smoothing said control pulse signal....."

The Examine cannot simply ignore this clearly defined interrelationship.

Moreover, in the first full paragraph on page 10 of the Office Action, the Examiner alleges that "... *it appears to be a leap for applicant to conclude that there is no intent in Kanbar to vary his fixed pulse rate.*"

In response, Applicant respectfully submits that such conclusion is easy to reach by reason of the environment described in Kanbar (e.g., an LED lamp module to be screwed into the AC power line of a traffic signal or warning signal) at lines 6-8 of column 1. That is, in such environment, the AC power line is constant and a traffic signal normally contains no circuit or need to adjust brightness or blinking rate, if the signal has a blinking capability.

Moreover, to one of ordinary skill in the art, the simple circuit 17 shown in Kanbar Figure 4 has no indication of any intent to vary width or periodicity of the pulses shown in Figure 5.

Hence, turning to the clear language of the claim, in Kanbar there is no teaching or suggestion for: "... a control pulse signal generator for generating a control pulse signal having a variable duty factor adjusted in dependence on characteristics of the light emitting diode; a smoothing circuit for smoothing said control pulse signal to generate a control voltage ...", as required by claim 1.

Therefore, claim 1 is clearly allowable over Kanbar and the remaining claims dependent thereto are also allowable, even if for no reason other than dependency.

The Examiner's Response Relative to Claim 12

In the final paragraph on page 11 related to claim 12, the Examiner responds that with the citation to "... *protection fuse 15 whose purpose is to open the circuit when the input current becomes too high (see column 3, lines 66 through column 4, lines 1-17, figure 2 at 15).*"

In response, Applicant submits that the above-recited interpretation fails to heed the plain meaning of the claim language in at least the following reasons:

1. The claim language requires that the protection is afforded for over-voltage fluctuations, not too-high current as described in the rejection. Applicant submits that one of

ordinary skill in the art would not consider over-current protection as equivalent to over-voltage protection.

2. The claim language requires that there be a "*maximum voltage generator that generates a maximum voltage*..." Applicant submits that one of ordinary skill in the art would not consider that a fuse satisfies the term "generator" and does not satisfy this description of being a "generator";

3. The claim language requires "... a *maximum voltage generator that generates a maximum voltage that corresponds to a current supply which provides a maximum luminance from the light emitting-diode* ...." Applicant submits that, to one of ordinary skill in the art, a simple protective fuse not only fails to satisfy being a generator of any type but, thereby, also fails to generate a voltage that corresponds to a specific characteristic of the LED.

The Examiner's Response Relative to Claim 13

In the first paragraph on page 12 related to claim 13, the Examiner maintains his position that Dussureault is properly combinable with Kanbar/Hochstein, in order "... *to maintain the intensity of the LEDs at desired level (see Dussureault at column 3, lines 21-37).*"

In response, Applicant submits that this rationale would defeat the purpose of the plain meaning of claim 6. That is, claim 6 requires an approximation of the luminance change characteristics of the lamp. Maintaining the intensity in accordance with the description of Dussureault defeats this approximation of luminance changes. Therefore, modification in accordance with the secondary reference would be improper. It is noted that this response applies equally to the rejection for claim 12.

Additional Deficiencies in the Rejection Currently of Record

It is noted that the rejection currently of record is inherently defective by reason of failing to properly analyze claims 8-20 as dependent from independent claim 6. The rejection currently of record for claims 14-16, 18, and 19 incorrectly relies upon the rejection for claim 1, rather than claim 6. These two independent claims do not have the same limitations.

Therefore, the rejection currently of record fails as a *prima facie* rejection for these claims. Moreover, as pointed out in the above discussion for claims 12 and 13, Dussureault is not properly combinable in an evaluation of claim 6, since the combination would defeat the

limitation described in the independent claim.

Furthermore, it is noted that limitations of various claims are not specifically addressed in the rejection currently of record. Accordingly, the rejection currently of record fails as a *prima facie* rejection for these claims. Specifically, the Examiner fails to address in claims 9 and 10, there are limitations for a control voltage switch and a constant voltage drive;

The rejection for claims 21 and 22 do not identify a "minimum control voltage generating circuit" or a "control voltage switching circuit" in any of the cited references.

Relative to claim 26, contrary to the Examiner's allegation, the description at lines 21-26 of column 5 of Hochstein does not describe either an IC or a software program.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing remarks, in combination with those of the previous Amendment, Applicant respectfully submits that claims 1, 2, and 6-26, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 2/14/05

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment Under 37 C.F.R. §1.116 by facsimile with the United States Patent and Trademark Office addressed to Examiner Uchendu O. Anyaso, Group Art Unit 2675, at fax number (703) 872-9306 this 14th day of February, 2005.

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